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(71) Applicant: SPEIGHTS LTD

Mirfield, West Yorkshire WF14 8BJ (GB)

(72) Inventor: Speight, Daniel

Cleckheaton, West Yorkshire BD19 6JD (GB)

(74) Representative: Denmark, James

Bailey, Walsh & Co.

5 York Place

Leeds LS1 2SD Yorkshire (GB)

(54) **Lighting device**

(57) A light fitting (40) comprises an attachment portion (70) and at least one and preferably a plurality of connector portions (50,52,54) to which conventional light bulbs may be connected. The connector portions (50,52,54) are provided with electrical power through wires (60) disposed internally of the fitting (40) which are in turn connected to an electrical connector (74) provided proximate the attachment portion (70). In use, the attachment portion (70) of the fitting (40) is adapted for attachment to an existing but empty light bulb fitting (12) on a ceiling which normally receives a conventional light bulb. Simultaneously with the attachment of the light fitting to the light bulb fitting (12), electrical connection is made between said light bulb fitting (12) and the electrical connector (74) within the light fitting (40) thus providing same with power. A simple and safe means of connecting chandeliers and the like to existing light bulb fittings results.

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## Description

[0001] This invention relates to improvements in lighting devices, and more particularly those lighting devices which are suspended and hang under gravity, and are powered by an electrical cable located within the ceiling, or which is disposed above the device to be powered.

[0002] It is common for building contractors, during the construction of domestic and commercial buildings, to employ an electrician to provide mains electrical wiring within the premises being constructed. Such wiring is manifested in the form of electrical sockets for connection of standard three pin plugs thereto from which convention domestic and office apparatus may be powered, and, where strip lighting or the like is not to be installed by the contractor, also in the form ceiling and wall mounted electrical light bulb fixings to which bulbs and/or light shades may be attached.

[0003] Such ceiling mounted electrical light bulb attachments also commonly remain in domestic and commercial property after the departure of particular owners or tenants who often opt to remove the shades and/or bulbs which they have purchased during their occupancy of the property and which they consider to be of aesthetic value.

[0004] Although reference is made throughout the specification to ceiling mounted electrical light bulb attachments, it will be immediately apparent from an understanding of the invention that any such light bulb attachment may be suitable.

[0005] In either case, empty properties are often provided only with said attachments, which are of two generic types. The first attachment has a base piece which is rigidly attached to the ceiling and to which is directly affixed, possibly by screw thread, a bulb attachment portion which receives a conventional light bulb (provided with any of the standard fixings, for example a Bayonet Cap (B22) lamp holder, Small Bayonet Cap (B15) lamp holder, Eddison Screw (E27) lamp holder, or Small Eddison Screw (E14) lamp holder). The attachment may additionally be provided with a screw thread shade connector and the bulb attachment portion may also be threaded, the shade typically having an annular portion which slides over the threaded region of the bulb attachment portion and held in place against the base piece by subsequent screwing of the shade connector onto the bulb attachment portion.

[0006] The second type of attachment is essentially similar the first attachment described above, except that a short length of electrical flex separates the base piece attached to the ceiling and the bulb attachment portion, which may additionally be provided with an aesthetic plastic moulding to cover any unsightly electrical connections within said bulb attachment. This type of attachment is also ideally provided with a shade connector.

[0007] Both types of electrical light attachment described above are provided with bulb attachment por-

tions which are capable of directly receiving a conventional light bulb. Where such attachments remain in domestic and commercial premises, the new occupants often require alternative lighting fixtures within the building, such as, for example, multi-arm pendant lights, which are in the style of chandeliers with each arm being provided with a bulb attachment to receive a bulb. In fact, it will be appreciated that any alternative light fixing to that provided and as described above may be required by the new occupants of a building, and in this regard, it is most likely that the services of an electrician may again be required because all such light attachments require some connection to the mains wiring of the building, and any incorrect electrical connection made by the new occupants could result in obviously disastrous consequences.

[0008] The electrician will usually be required to detach the existing light attachment where such is provided and attach the desired alternative to the mains wiring, and it is the primary object of this invention to avoid the expense and inconvenience of employing a skilled technician to perform this task.

[0009] In certain circumstances, conventional light fittings have potentially lethal wires protruding from their connection points. It will be instantly appreciated the services of an electrician are generally indispensable in such cases.

[0010] It is to be further mentioned that almost all light fittings which are currently purchased by the owners and/or occupants of premises are provided with similar bare wires which allow for the connection of the fitting as described above. It is a further object of this invention to provide a light fitting with alternate connection means which does not detract from the aesthetic appeal of the light fitting prior to installation.

[0011] It is a further object of the invention to provide a light attachment which may be installed by persons with no electrical expertise, and furthermore may be installed safely, without inconvenience, and in the minimum possible time.

[0012] According to the invention there is provided a light fitting suspended from or otherwise mounted to a ceiling, wall or floor, characterised in that the light fitting is provided with electrical power through and is suspended or otherwise connected through conventional light bulb connection means.

[0013] By conventional light bulb connection means is meant the means by which conventional light bulbs are attached to light fixings, examples of such means being mentioned above as Bayonet Cap lamp holders and the like. Typically the light bulb is provided with the male connection means, and the light fitting is provided with the female connection means, although it is not the intention of the applicant that the invention be limited to such arrangement, as it is irrelevant whether the suspendible light fitting is provided with male or female light bulb connection means.

[0014] Preferably, the suspendible light fitting is in the

shape of a chandelier and provided with a plurality of arms, at least one of which is provided with light bulb connection means for the connection of a conventional light bulb, the chandelier being further provided with male light bulb connection means from which it is suspended and provided with electrical power. Most preferably, a plurality of the arms of the pendant are provided with light bulb connection means.

[0015] In a further aspect of the invention there is provided a lighting system comprising a light fitting to which at least one conventional light bulb may be connected, and a light bulb fitting suspended from or otherwise mounted on a ceiling, wall or floor, said light bulb fitting being provided with a source of electrical power, characterised in that the light fitting is further provided with light bulb connection means to enable said light fitting to be connected to the suspended or mounted light bulb fitting in identical manner to a conventional light bulb and optionally suspended therefrom or mounted thereon, said light fitting being provided with electrical power through said light bulb connection means.

[0016] In all aspects of the invention, it is preferable that the light bulb connection means with which the light fitting is provided is a bayonet type connection means. It is to be appreciated that "Edison Screw" and other connection means may be provided, and such connection means are to be considered as covered by this application.

[0017] Henceforth the requirement for an electrician to detach the existing light bulb fittings provided or remaining in a building and attach replacements as required by the new occupants is instantly eliminated. Furthermore, the attachment of the light fittings according to the invention is extremely simple and safe.

[0018] A further advantage of the invention is that there is no need to disconnect the electricity supply of the building in which the new light fittings are to be installed.

[0019] A yet further advantage of the invention is the elimination of the requirement for screw fixing of new light fittings. Furthermore, the ease of connection and disconnection of light fittings according to the invention allows for portability between rooms, and even different buildings.

[0020] It is a still further advantage of the invention that all the electrical connections within the light fitting are previously made at the premises of the manufacturer prior to the installation of the light fitting. Henceforth, such connections are intrinsically safe and furthermore completely concealed from and are precluded from intervention by the consumer. Such a safe and secure light fitting has heretofore not been proposed, and indeed it is thought that the concealment of all electrical connections within the light fitting enhances its aesthetic appearance when on sale. Additionally, the concealment of any wires internally of the light fitting and the intrinsically safe termination of such wires also internally of the light fitting and in the connector by

which the fitting may be attached to conventional light bulb fittings represent further advantages of the invention.

[0021] The common and aesthetically pleasing "multi-armed pendant" type light fittings adapted according to the invention are also easy to install and their use and appeal is thus enhanced. Additionally, the connection of such a light fitting to an existing light bulb fitting allows a plurality of light bulbs to be powered through a single connection thereto.

[0022] The ease of sale of the new light fittings is also increased, as no technical knowledge or information is required for the connection thereof to existing light bulb fittings.

[0023] A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings wherein:

Fig. 1 shows an exploded perspective view of a light bulb fitting of prior art configuration;  
Fig. 2 shows a sectional view of a multi-arm pendant light fitting according to the invention; and  
Fig. 3 shows an enlarged perspective view of the method of attachment and powering of the light fitting of Fig. 2.

[0024] Referring firstly to Fig. 1, a standard electric light bulb fitting 2 has a base portion 4 provided with apertures 6 which receive screws (not shown) for mounting the base portion on a wall or ceiling or the like. The base portion 4 has a central aperture 8 to allow access to electrical terminal connections 10 provided on a light bulb connection portion 12 prior to the mounting of the light bulb fitting.

[0025] The light bulb connection 12 is provided internally with spring loaded pins 14 which are in electrical communication with the terminal contacts 10, and further provided with a pair of cut-out portions one of which is shown at 16, the other being located diametrically opposite thereto, for conventional bayonet style connection of a light bulb thereto. The bulb connection portion 12 is located on a hollow protruding threaded portion 18 provided on the base portion 4 by a pair of locating lugs 20 which are received by a corresponding cut-out portion 24 provided in a flange 22 of the bulb connection portion 12.

[0026] A threaded fixing washer 26 is adapted to slide over substantially the entire length of the bulb connecting portion 12 for screwing onto threaded portion 18, the provision of a lip 28 matingly contacting the underside of the flange 22 of the bulb connection portion 12 for secure connection thereof to the base portion 4 as the threaded washer 26 is screwed onto the threaded portion 18. A shade connector 30 is provided internally with threads 32 for screwing onto a threaded portion 34 of the bulb connecting portion 12. This allows for the connection of a shade (not shown) provided with a supporting annulus of a diameter marginally greater than that of

the bulb connecting portion 12 such that said annulus may be trapped between the shade connector 30 and the outer surface of the lip 28 as the shade connector is screwed onto the bulb connecting portion.

[0027] Fig. 1 shows a first generic type of light bulb fitting, but it is to be understood that the invention may apply equally to a second type of light bulb fitting wherein a short length of electrical flex is provided between the base portion 4 and the bulb connecting portion 12. In the interests of clarity, this second type of light bulb fitting has not been shown.

[0028] Furthermore, it is the intention of the Applicant that the light bulb connecting portion 12 may be of different configuration adapted to receive light bulbs provided with screw thread fittings, or of any particular configuration required to receive any of the currently commercially available light bulbs.

[0029] Referring now to Fig. 2, a light fitting 40 of the multi-arm pendant type, such light fittings are traditionally provided with a number of hollow arms 42 and a hollow stem 44 between which aesthetically pleasing stays 46 may optionally be provided, said arms 42 and stem 44 meeting at a cylindrical connector 48.

[0030] Provided at the end of each arm 42 is a cup 50 in which is located a socket 52 which may receive a light bulb with conventional bayonet connection means. Within the socket 52 there is provided a corresponding bayonet connector 54 provided internally with electrical contacts 56 which are wired through the hollow arm 42 to a wire splitting connector 58 provided within the cylindrical connector 48. The electrical wire splitting connector 58 is provided with electricity from a central wire 60 ultimately connected to the mains wiring of the premises in which the light fitting is to be installed, the connector 58 being split according to the number of arms 42 which the light fitting has such that electrical power can be provided to all such electrical contacts 56 provided within the sockets 52.

[0031] Currently, it is common for such light fittings to be sold to the ultimate user with all the internal electrical connections between the sockets 52 and the wire splitting connector 58 already made, and to provide the powering wire which passes through the stem 44 without any connection device at the uppermost end of the fitting, such that bare wires extend from the stem. In such circumstances, it is generally necessary to employ the services of an electrician to connect the light fitting to the mains wiring of the house or other premises in which the light fitting is to be located, but in Figs. 2 and 3, the light fitting is shown with connection means 70 according to the invention which facilitate the connection of the light fitting to a standard light bulb fitting 2 as shown in Fig. 1.

[0032] In particular, the electrical wire extending through the stem 44 of the light fitting passes into a cup 72 rigidly attached to said stem within which is provided an electrical connector 74 which is in turn attached to said cup by screw fixing or other means indicated at 76,

said means being generally known and understood by those skilled in the art.

[0033] With reference to Fig. 3 which shows an enlarged perspective view of the cup 72 in proximate relationship to a typical bulb connecting portion 12 of the type shown in Fig. 1, the electrical connector 74 is provided with a pair of diametrically opposed spigots 78 which are received by the cut-out portions 16 of the bulb connecting portion 12, such that upward and anti-clockwise rotation of the entire light fitting 40 as shown by arrow 80 allows the electrical connector 74 to slide within the bulb connecting portion 12 and be entirely suspended therefrom by the spigots 78 which rest on the substantially horizontal portions of the cut-out portions 16.

[0034] The electrical connector 74 is provided with electrical contacts 82, and the orientation of said electrical connector is such that after rotation of the light fitting with said electrical connector within the bulb connecting portion 12 brings the electrical contacts 82 into mating contact with the sprung pins 14 in order that electrical power may be supplied to the light fittings.

[0035] Although the above description relates almost in its entirety to a light fitting provided with a bayonet-style electrical connector 74, other forms of connector, such as a screw type connector, are considered within the ambit of this application.

[0036] Furthermore, it will be instantly appreciated that the invention provides an extremely simple, quick and safe means of electrically connecting a light fitting to an existing light bulb fitting.

#### Claims

1. A light fitting suspended from or otherwise mounted to a ceiling, wall or floor, said light fitting being provided with both attachment means and electrical connection means characterised in that the attachment means and the electrical connection means allow for the attachment of the fitting to a conventional light bulb fixing which thus provides the fitting with electrical power as the attachment is completed.
2. A light fitting according to claim 1 characterised in that the attachment means and the electrical connection means are embodied in a single component rigidly secured within the fitting and which transfers electrical power from the attachment through the fitting.
3. A light fitting according to either of the preceding claims characterised in that light fitting is in the shape of a chandelier and provided with a plurality of arms, at least one of which is provided with light bulb connection means for the connection of a conventional light bulb

4. A light fitting according to claim 3 characterised in that the chandelier is provided with male attachment means from which it is suspended and provided with electrical power.
5. A lighting system comprising a light fitting to which at least one conventional light bulb may be connected, and a light bulb fitting suspended from or otherwise mounted on a ceiling, wall or floor, said light bulb fitting being provided with a source of electrical power, characterised in that the light fitting is further provided with light bulb attachment means to enable said light fitting to be attached to the suspended or mounted light bulb fitting in identical manner to a conventional light bulb and optionally suspended therefrom or mounted thereon, said light fitting being provided with electrical power through said light bulb connection means.
6. A light fitting according to any of claims 1-4 or a lighting system according to claim 5 characterised in that according the light bulb attachment means with which the light fitting is provided is a bayonet type connection means.
7. A light fitting or system according to any of the preceding claims characterised in that the light fitting is a "multi-armed pendant" type light fitting.
8. A light fitting substantially as herein before described with reference to the accompanying description and drawings.

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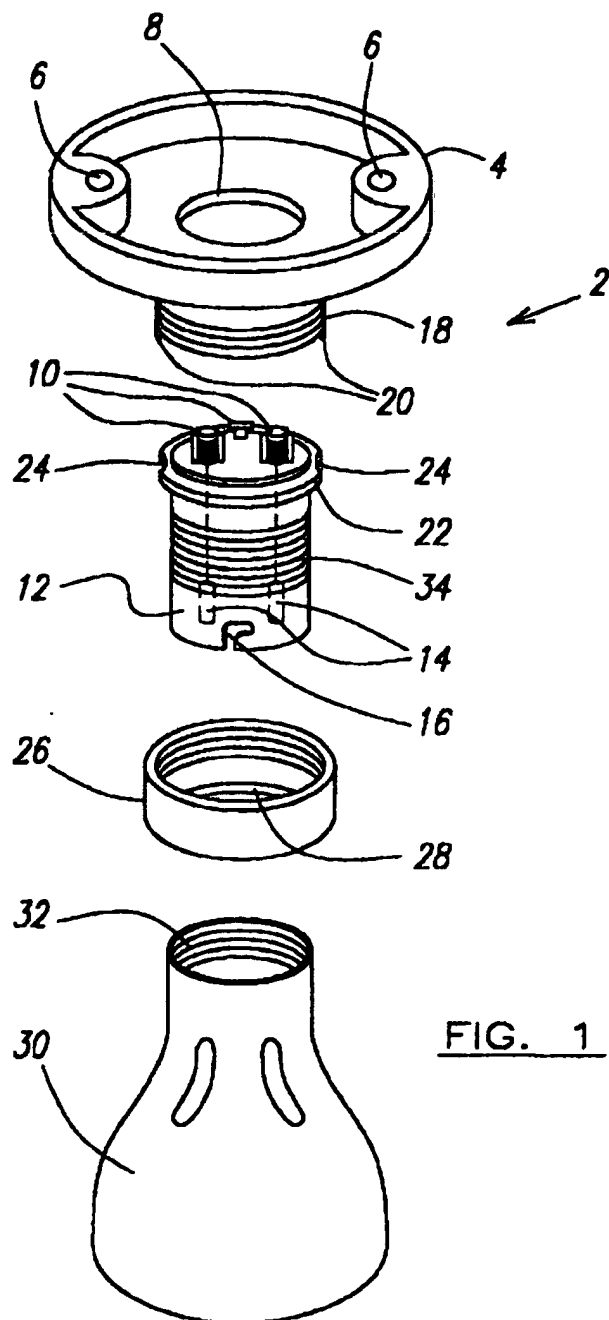


FIG. 1

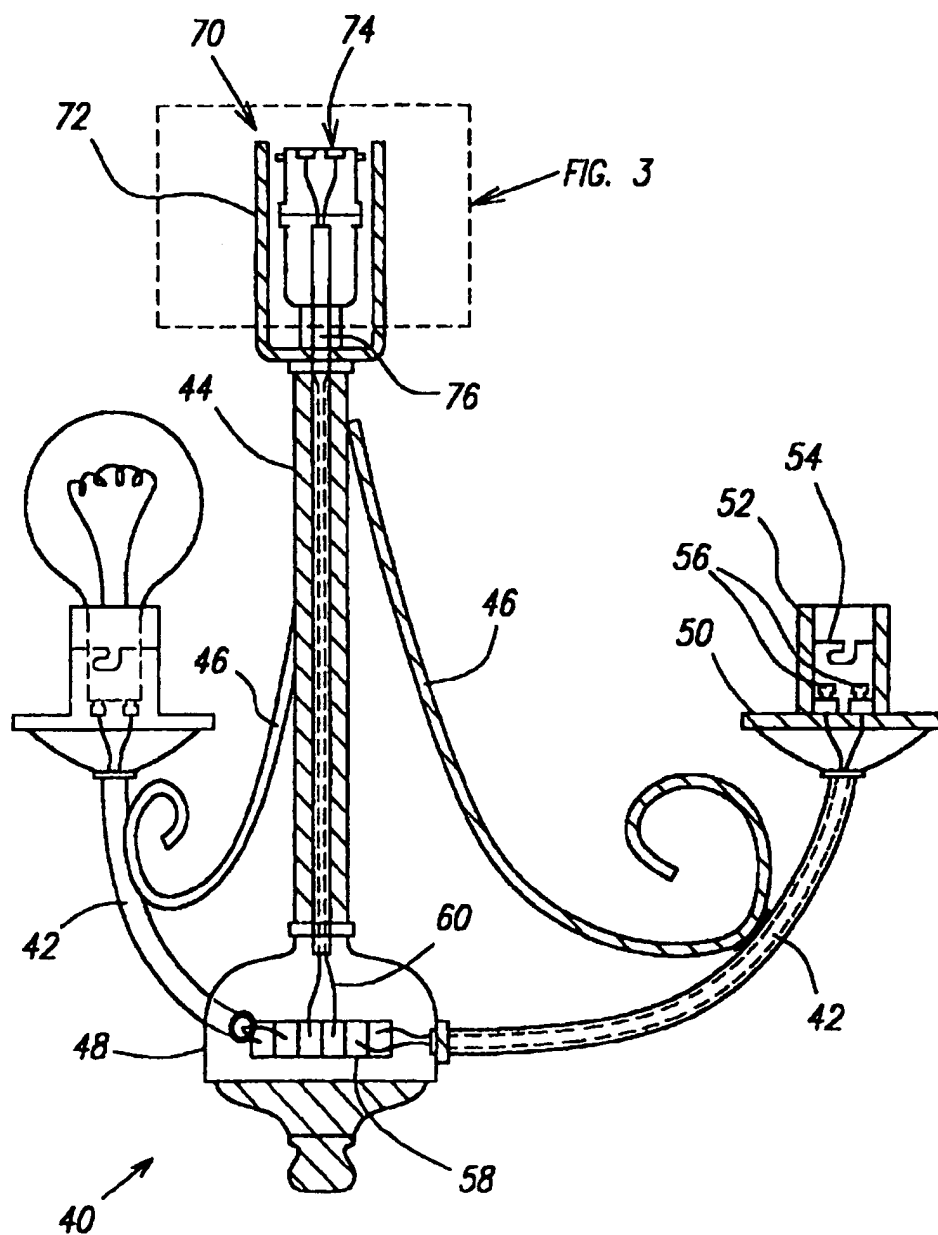


FIG. 2

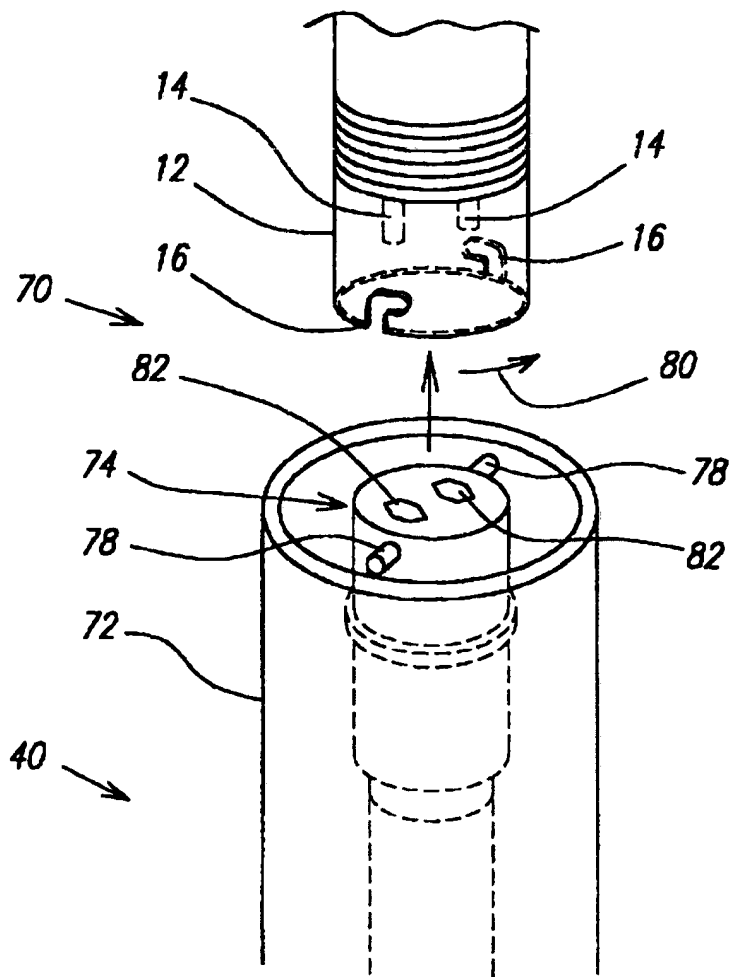


FIG. 3